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*Attorneys for Plaintiff and the Proposed Classes*

**UNITED STATES DISTRICT COURT  
DISTRICT OF NEW JERSEY**

BRIAN CALEB BATEY, Individually and on  
Behalf of Himself and All Others Similarly  
Situating,

Plaintiff,

vs.

LG CHEM AMERICA, INC., LG CHEM, LTD.,  
PANASONIC CORPORATION, PANASONIC  
CORPORATION OF NORTH AMERICA,  
SANYO ELECTRIC CO., LTD, SANYO  
NORTH AMERICA CORPORATION, SONY  
CORPORATION, SONY ENERGY DEVICES  
CORPORATION, SONY ELECTRONICS, INC.,  
SAMSUNG SDI CO., LTD., SAMSUNG SDI  
AMERICA, INC., HITACHI, LTD., HITACHI  
MAXELL, LTD., and MAXELL  
CORPORATION OF AMERICA,

Defendants.

Civil Action No.

**COMPLAINT and  
DEMAND FOR JURY TRIAL**

Plaintiff, Brian Caleb Batey, individually, and on behalf of himself and all those similarly  
situated in the United States, by and through his attorneys, based on his personal knowledge as to

his own actions and on the independent investigation of his counsel, by way of Complaint against Defendants, alleges as follows:

## **I. NATURE OF THE CASE**

1. This lawsuit is brought as a proposed class action against Defendants, the world's largest manufacturers of Lithium Ion Rechargeable Batteries (defined further below), for engaging in a conspiracy to unlawfully fix the prices of Lithium Ion Rechargeable Batteries.<sup>1</sup> Lithium Ion Rechargeable Batteries are an important source of energy for portable computers, personal electronic devices, and other products.

2. Defendants, their parents, subsidiaries, or affiliates have orchestrated some of the largest global price-fixing conspiracies witnessed in the past decade- fixing the prices of key components for consumer electronic goods, including computers, televisions, and cellular phones. These entities, and many of their executives, have pleaded guilty to price-fixing dynamic random access memory (DRAM) chips, liquid crystal display (LCD) screens, and optical disc drives (ODDS). These component part conspiracies – like the conspiracy to fix Lithium Ion Rechargeable Battery prices – all have very similar features, including: (a) a highly concentrated market controlled by Asian corporations; (b) pricing pressure exerted on the conspirators by original equipment manufacturers (“OEMs”) seeking to price their products in a competitive consumer electronics market; (c) rapid commoditization of new technology; (d) and pricing behavior inconsistent with a competitive market.

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<sup>1</sup> The subject of this lawsuit and the Defendants' conspiracy is Lithium Ion Rechargeable Batteries, which are further described *infra* at paragraphs 43 – 56. The products containing Lithium Ion Rechargeable Batteries and which were purchased by the Plaintiff and the Classes are cameras, notebook computers, mobile telephones, smartphones, personal digital assistants, tablet computers, and handheld game consoles (collectively, “Lithium Ion Rechargeable Battery Products” or “LIB Products”).

3. Just like these other criminal conspiracies, Defendants' conspiracy here successfully targeted yet again another key component of consumer electronic goods by raising prices for Lithium Ion Rechargeable Batteries, and in turn, the prices of Lithium Ion Rechargeable Battery Products such as those purchased by Plaintiff. Defendants' conspiracy was an illegal and unreasonable restraint of interstate and foreign commerce in violation of Section One of the Sherman Act, 15 U.S.C. §1 and the laws of Tennessee as set forth herein.

4. Plaintiff and the proposed classes consist of consumers who (1) indirectly purchased a stand-alone Lithium Ion Rechargeable Battery containing a cell manufactured by a Defendant or (2) a Lithium Ion Rechargeable Battery Product containing a Lithium Ion Rechargeable Battery containing a cell manufactured by a Defendant, during the period from, and including, January 1, 2002 through the present (the "Class Period").

5. "Lithium Ion Rechargeable Batteries" as used in this complaint, are batteries which are rechargeable and which utilize lithium ion technology.

6. Defendants LG Chem America, Inc., LG Chem, Ltd., , Panasonic Corporation, Panasonic Corporation of North America, Sanyo Electric Co., Ltd., Sanyo North American Corporation, Sony Corporation, Sony Electronics, Inc., Sony Energy Devices Corporation, Samsung SDI Co., Ltd., Samsung SDI America, Inc., Hitachi, Ltd., Hitachi Maxell, Ltd., and Maxell Corporation of America (collectively, "Defendants") manufacture, market, and sell Lithium Ion Rechargeable Batteries throughout the United States and the world. The Defendants collectively controlled approximately two-thirds or more of the worldwide market for Lithium Ion Rechargeable Batteries throughout this period, and over 80% of the market in the early part of this period. The manufacture and sale of Lithium Ion Rechargeable Batteries is a multi-billion dollar industry. In 2011, the worldwide market for Lithium Ion Rechargeable Batteries was approximately \$14 billion. This figure is expected to top \$16 billion in 2012.

7. Defendants and other co-conspirators (as yet unknown) agreed to fix prices of Lithium Ion Rechargeable Batteries.

8. As further described below, competition authorities in at least the United States and the European Union have been investigating a conspiracy in the market for Lithium Ion Rechargeable Batteries since at least the first half of 2011. The Antitrust Division of the United States Department of Justice (“DOJ”) is conducting a criminal investigation into anti-competitive conduct in the market for Lithium Ion Rechargeable Batteries.

9. As a direct result of the anti-competitive and unlawful conduct alleged herein, Plaintiff and the Classes paid artificially inflated prices for Lithium Ion Rechargeable Batteries during the Class Period and have thereby suffered antitrust injury to their business or property.

## **II. JURISDICTION AND VENUE**

10. This Court has jurisdiction over the instant matter pursuant to 28 U.S.C. §1332(d) and the Class Action Fairness Act of 2005 (“CAFA”), 28 U.S.C. §1711, *et seq.*, which vest original jurisdiction in the district courts of the United States for any multi-state class action where the aggregate amount in controversy exceeds \$5 million and where the citizenship of any member of the class of plaintiffs is different from that of any defendant. The \$5 million amount-in-controversy and diverse-citizenship requirements of CAFA are satisfied in this case.

11. Venue is appropriate in this district under 28 U.S.C. §1391(b) and (c), because, during the Class Period, many of the Defendants transacted business, were found, or had agents in this district and because a substantial portion of the affected interstate trade and commerce described below has been carried out in this district.

12. This Court has personal jurisdiction over each Defendant because, *inter alia*, each Defendant: (a) transacted business throughout the United States, including in this district; (b) participated in the sale and distribution of Lithium Ion Rechargeable Batteries throughout the

United States, including in this district; (c) had substantial contacts with the United States, including in this district; and/or (d) was engaged in an illegal conspiracy that was directed at and had the intended effect of causing injury to persons residing in, located in, or doing business throughout the United States, including in this district.

13. Defendants engaged in conduct both inside and outside the U.S. that caused direct, substantial, and reasonably foreseeable and intended anti-competitive effects upon interstate commerce within the United States.

14. The activities of the Defendants and their co-conspirators were within the flow of, were intended to, and did have, a substantial effect on interstate commerce of the United States. Defendants' products are sold in the flow of interstate commerce.

15. Lithium Ion Rechargeable Batteries manufactured abroad by Defendants and sold for use in Lithium Ion Rechargeable Battery Products either manufactured in the United States or manufactured abroad and sold in the United States, are goods brought into the United States for sale, and therefore, constitute import commerce. To the extent any Lithium Ion Rechargeable Batteries are purchased in the U.S. and such Lithium Ion Rechargeable Batteries do not constitute import commerce, Defendants' unlawful activities with respect thereto, as more fully alleged herein during the Class Period, had, and continue to have, a direct, substantial and reasonably foreseeable effect on United States commerce. The anti-competitive conduct, and its effects on United States commerce described herein, proximately caused antitrust injury to the Plaintiff and members of the classes in the U.S.

16. By reason of the unlawful activities alleged herein, Defendants substantially affected commerce throughout the U.S., causing injury to Plaintiff and members of the classes. Defendants, directly and through their agents, engaged in a conspiracy to fix prices of Lithium

Ion Rechargeable Batteries, which unreasonably restrained trade and adversely affected the market for Lithium Ion Rechargeable Batteries.

17. Defendants' conspiracy and wrongdoing described herein adversely affected persons in the United States who purchased Lithium Ion Rechargeable Batteries or Lithium Ion Rechargeable Battery Products for personal use and not for resale, including Plaintiff and members of the classes.

### **III. THE PARTIES**

#### **A. Plaintiff**

18. Plaintiff Brian Caleb Batey is a citizen of Tennessee. During the Class Period, Plaintiff purchased a Lithium Ion Rechargeable Battery for an Asus laptop containing a cell manufactured by a Defendant. As a result of the antitrust violations alleged in this complaint, Plaintiff has suffered injury.

#### **B. Defendants**

19. Defendant LG Chem America, Inc. ("LG Chem America") is a New Jersey corporation with its principal place of business at 1000 Sylvan Avenue, Englewood Cliffs, New Jersey 07632. Defendant LG Chem America is a wholly owned subsidiary of Defendant LG Chem. Defendant LG Chem America, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were purchased throughout the United States, including in this district, during the Class Period.

20. Defendant LG Chem, Ltd. ("LG Chem") is a Korean corporation with its principal executive offices at 20 Yeouido-dong, Yeongdeungpo-gu, Seoul, South Korea. Defendant LG Chem is an affiliate of Seoul-based conglomerate LG Electronics. LG Chem is one of the world's leading manufacturers of Lithium Ion Rechargeable Batteries. Defendant LG

Chem, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were purchased throughout the United States, including in this district, during the Class Period.

21. Defendants LG Chem and LG Chem America are referred to collectively herein as “LG Chem.”

22. Defendant Panasonic Corporation is a Japanese corporation with its principal executive offices at 1006 Oaza Kadoma, Osaka 571-8501, Japan. Up until approximately October 1, 2008, Panasonic Corporation was known as Matsushita Electric Industrial Co., Ltd. Defendant Panasonic Corporation manufactures and sells Lithium Ion Rechargeable Batteries under the Panasonic name and also under the name of Defendant and wholly owned subsidiary, Sanyo Electric Co., Ltd. With respect to those batteries sold under the Panasonic name, they are produced under Panasonic’s internal division called “Energy Company.” Defendant Panasonic Corporation is one of the world’s leading manufacturers of Lithium Ion Rechargeable Batteries. Defendant Panasonic Corporation, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

23. Defendant Panasonic Corporation of North America, formerly known as Matsushita Electric Corporation of America, is a Delaware Corporation with its principal executive offices at 1 Panasonic Way, Secaucus, New Jersey 07094. Panasonic Corporation of North America is a wholly owned and controlled subsidiary of Defendant Panasonic Corporation. Defendant Panasonic Corporation of North America, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and

manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

24. Defendant Sanyo Electric Co., Ltd. (“Sanyo”) is a Japanese corporation with its principal executive offices at 5-5 Keihan-Hondori, 2-chome, Moriguchi, Osaka 570-8677, Japan. Defendant Sanyo is one of the largest manufacturers and suppliers of Lithium Ion Rechargeable Batteries in the world. As of December 9, 2009, Defendant Sanyo became a wholly owned subsidiary of Defendant Panasonic Corporation. Defendant Sanyo, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

25. Defendant Sanyo North America Corporation is a Delaware corporation with its principal executive offices at 2055 Sanyo Avenue, San Diego, California 92154. Defendant Sanyo North America Corporation is a wholly owned subsidiary of Defendant Sanyo Electric Co., Ltd. Defendant Sanyo North America Corporation, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

26. Defendants Panasonic Corporation, Panasonic Corporation of North America, Sanyo Electric, Co., Ltd., and Sanyo North America Corporation are referred to collectively herein as “Panasonic.”

27. Defendant Sony Corporation is a Japanese corporation with its principal executive offices at 7-1 Konan 1-Chome, Minato-Ku, Tokyo 108-0025 Japan. Defendant Sony Corporation invented the Lithium Ion Rechargeable Battery in 1991 and since then, has been one of the world’s leading suppliers of Lithium Ion Rechargeable Batteries. Defendant Sony



Corporation, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

28. Sony Energy Devices Corporation is a Japanese corporation with its principal executive offices at 1-1 Shimosugishita, Takakura, Hiwada-machi, Koriyama-shi, Fukushima 963-0531 Japan. Defendant Sony Energy Devices Corporation is a wholly owned subsidiary of Defendant Sony Corporation. Sony Corporation manufactures its Lithium Ion Rechargeable Batteries through its Sony Energy Devices Corporation subsidiary. Sony Energy Devices Corporation manufactures its Lithium Ion Rechargeable Batteries at plants located in Japan, Singapore, and China. Defendant Sony Energy Devices Corporation, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

29. Defendant Sony Electronics, Inc. is a Delaware corporation with its principal executive offices at 16530 Via Esprillo, San Diego, CA 92127. Defendant Sony Electronics, Inc. is a wholly owned subsidiary of defendant Sony Corporation. Defendant Sony Electronics, Inc., either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

30. Defendants Sony Corporation, Sony Energy Devices Corporation, and Sony Electronics, Inc. are referred to collectively herein as “Sony.”

31. Defendant Samsung SDI Co., Ltd. (“Samsung SDI”) is a Korean corporation with its principal executive offices at 575 Shin-Dong, Youngtong-Gu, Suwon, Gyeonggi, South

Korea. Defendant Samsung SDI Co., Ltd. is 20% owned by the Korean conglomerate Samsung Electronics, Inc. Defendant Samsung SDI is the world's largest manufacturer of Lithium Ion Rechargeable Batteries. Defendant Samsung SDI, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

32. Defendant Samsung SDI America, Inc. ("Samsung SDI America") is a California corporation with its principal executive offices at 85 W. Tasman Drive, San Jose, CA 95134. Samsung SDI America is a wholly owned subsidiary of Defendant Samsung SDI. Defendant Samsung SDI America, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

33. Defendants Samsung SDI and Samsung SDI America are referred to collectively herein as "Samsung SDI."

34. Defendant Hitachi, Ltd. is a Japanese company with its principal executive offices at 6-6, Marunouchi 1-chome, Chiyoda-ku, Tokyo 100-8280, Japan. Defendant Hitachi, Ltd. manufactures and sells Lithium Ion Rechargeable Batteries through its Components and Devices Business Unit. Defendant Hitachi, Ltd., either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

35. Defendant Hitachi Maxell, Ltd. ("Hitachi-Maxell") is a Japanese corporation with its principal executive offices at 2-18-2 Iidabashi, Chiyoda-ku, Tokyo 102-8521 Japan.

Defendant Hitachi-Maxell is a wholly owned subsidiary of Defendant Hitachi, Ltd. Hitachi-Maxell was founded in 1960 and manufactures and sells batteries through its batteries business unit. Defendant Hitachi-Maxell, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

36. Defendant Maxell Corporation of America (“Maxell”) is a New Jersey corporation with its principal executive offices at 3 Garrett Mountain Plaza, 3rd Floor, Suite 300, Woodland Park, New Jersey 07424. Defendant Maxell, either directly or through a wholly owned subsidiary, participated in the conspiracy alleged in this complaint and manufactured, marketed and/or sold Lithium Ion Rechargeable Batteries that were distributed throughout the United States, including in this district, during the Class Period.

37. Defendants Hitachi, Ltd., Hitachi-Maxell, Ltd., and Maxell Corporation of America are referred to collectively herein as “Hitachi.”

#### **IV. STATEMENT OF FACTS**

##### **A. Batteries**

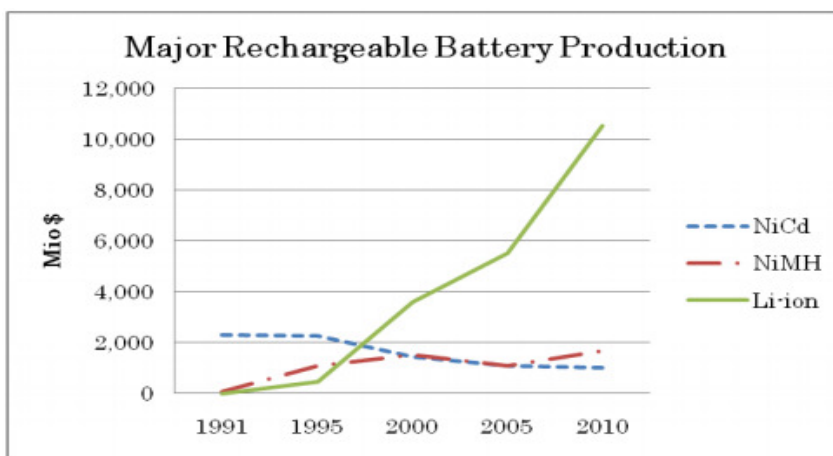
38. Batteries are one of the primary sources of energy which power many different machines and devices used every day. There are three different categories of batteries: 1) chemical; 2) physical; and 3) biological. Chemical batteries generate electricity through a chemical reaction that occurs inside the battery. The batteries at issue in this case – Lithium Ion Rechargeable Batteries – are within the chemical family of batteries.

39. Chemical batteries are generally classified as either “primary” or “secondary.” Primary batteries are disposable batteries that one uses until they are expended and then discards.

Secondary batteries are rechargeable. Rechargeable batteries account for roughly 80% of all chemical batteries produced worldwide.

40. There are four types of batteries that account for the vast majority of secondary batteries: (1) Lithium Ion Rechargeable Batteries; (2) lead-acid; (3) nickel-cadmium; and (4) nickel-metal hydride. Lithium Ion Rechargeable Batteries are, by far, the most popular type of rechargeable battery. This complaint and the illegal conduct alleged herein concerns Lithium Ion Rechargeable Batteries.

41. Both Lithium Ion Rechargeable Batteries, as well as nickel-metal hydride rechargeable batteries, were introduced in or around 1991. Since that time, however, Lithium Ion Rechargeable Batteries have quickly become the most popular type of secondary battery easily outpacing nickel-metal hydride and nickel-cadmium rechargeable batteries. The following graph (based on data from the Institute of Information Technology, Ltd.) shows the growth rates of Lithium Ion Rechargeable Batteries versus nickel-metal hydride and nickel-cadmium batteries:



## B. Lithium Ion Rechargeable Batteries

42. A Lithium Ion Rechargeable Battery generally contains three primary components: (1) the negative electrode (cathode); (2) positive electrode (anode); and (3) the

electrolyte. The negative electrode of a conventional Lithium Ion Rechargeable Battery is made from carbon, typically graphite. The positive electrode is a metal oxide, usually a layered oxide (such as lithium cobalt oxide), a polyanion (such as lithium iron phosphate), or a spinel (such as lithium manganese oxide). The electrolyte is typically a mixture of organic carbonates such as ethylene carbonate or diethyl carbonate containing complexes of lithium ions (usually lithium salts, such as lithium hexafluorophosphate, lithium hexafluoroarsenate monohydrate, lithium percolate, lithium tetrafluoroborate, and lithium triflate).

43. Internally, the battery has a separator between the cathode and anode and is filled with the organic electrolyte solution. The separator prevents short circuits that would occur if there were contact between the anode and cathode. At the same time, the separator protects the electrolyte solution and preserves the battery's conductivity. In the recharging process, lithium ions are released from the cathode into the electrolyte solution where they accumulate between the anode layers. During the discharge process, the ions return to the cathode. The movement of lithium ions between the cathode and the anode during the discharge process creates the electric current from the battery which powers the specific device it is used in.

44. There are generally two primary steps in the manufacture of Lithium Ion Rechargeable Batteries. In the first step, the "cell" of the battery is manufactured – which includes the cathode, anode, and electrolyte. The cell, and in some cases, multiple cells, are then assembled inside an enclosure. In some cases, certain protection circuitry is also added inside the enclosure. The assembled product is referred to as the "battery" or "module" and is the product that is placed inside a device to supply power to the device. All of the Defendants named herein manufacture both raw Lithium Ion Rechargeable Battery cells as well as modules. In addition to the manufacture and sale of raw Lithium Ion Rechargeable Battery cells and modules, Defendants also sell raw cells to other entities commonly referred to in the industry as

“assemblers.” In these cases, the raw Lithium Ion Rechargeable Battery cells made by Defendants are incorporated into a module by assemblers who assemble the cells (and if necessary, circuitry) and then sell the module under their own brand name. Whether manufactured by a Defendant or an assembler, the raw cells in a finished battery or module make up the overwhelming cost of a finished Lithium Ion Rechargeable Battery module.

45. Lithium Ion Rechargeable Batteries are generally divided into four different types: (1) small cylindrical (solid body without terminals); (2) large cylindrical (solid body with large threaded terminals); (3) pouch (soft, flat body, such as those used in cell phones); and (4) prismatic (semi-hard plastic case with large threaded terminals). Each Defendant manufactures and markets each of these types of Lithium Ion Rechargeable Batteries. Lithium ion cylindrical or prismatic batteries are used primarily in notebooks, camcorders, mobile phones, and other electronic devices.

46. In addition to the four different types of Lithium Ion Rechargeable Batteries described above, there are also lithium ion polymer batteries. The exterior of the lithium ion polymer battery is generally made of a laminate film which allows it to be more flexible in terms of its shape.

47. One of the primary differences between lithium ion and lithium ion polymer batteries is that in the latter, the lithium salt electrolyte is not held in an organic solvent, but rather, in a solid polymer composite such as polyethylene oxide or polyacrylonitrile. The dry polymer design offers advantages over the traditional lithium ion battery in terms of fabrication and ruggedness since the electrolyte is a solid polymer as opposed to a gel or liquid electrolyte.

48. Lithium Ion Rechargeable Batteries, as defined herein, include cylindrical, prismatic, pouch, and polymer Lithium Ion Rechargeable Batteries.

49. Lithium Ion Rechargeable Batteries possess certain unique performance qualities which make them the most popular form of rechargeable battery. In addition, because of these characteristics, Lithium Ion Rechargeable Batteries are not interchangeable with other types of secondary or rechargeable batteries such as nickel-cadmium or nickel-metal hydride.

50. Unlike other forms of rechargeable batteries (such as nickel-cadmium or nickel-metal hydride), Lithium Ion Rechargeable Batteries are the only rechargeable battery which do not suffer from any “memory effect.” For example, if a nickel-cadmium battery is charged repeatedly to 70% capacity, the discharge voltage will begin to fall sharply from the 70% even after a full charge and eventually, the battery will be incapable of holding a charge. The battery essentially remembers 70% as the full capacity. Lithium Ion Rechargeable Batteries, on the other hand, do not suffer from the memory effect, and there is no risk to reducing the capacity of the battery when only partially charging the battery.

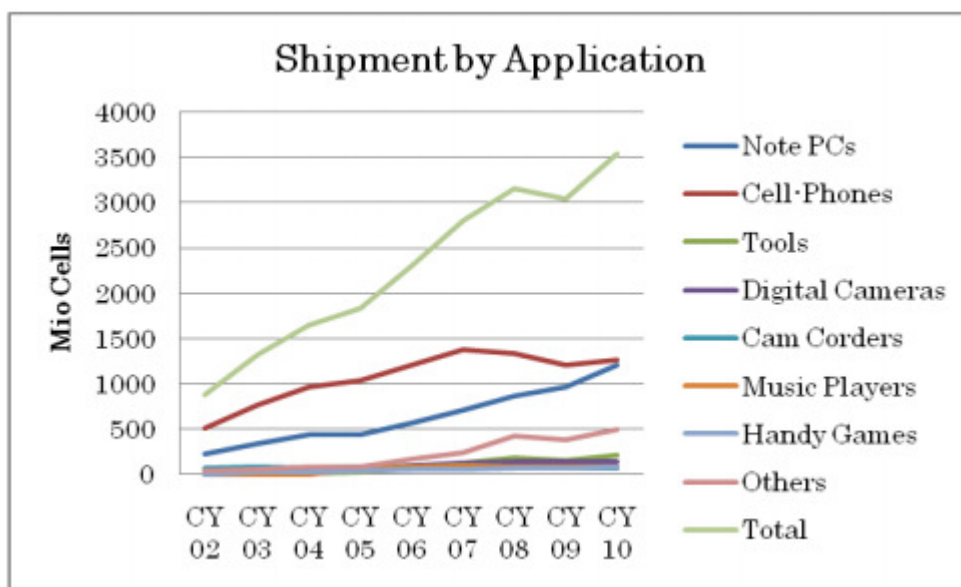
51. A second feature which makes Lithium Ion Rechargeable Batteries unique is that they are more powerful than all other types of rechargeable batteries. For example, the nominal voltage of a nickel-metal hydride rechargeable battery is 1.2 volts. The nominal voltage of a Lithium Ion Rechargeable Battery, on the other hand, is 3.7 volts, nearly three times more powerful.

52. Lithium Ion Rechargeable Batteries also possess a higher “energy density” than other types of rechargeable batteries. “Capacity” refers to the volume of electricity that a battery can hold. The energy volume in a battery is the voltage times the capacity. Lithium Ion Rechargeable Batteries possess high energy density, both per weight and per volume, as compared to other types of rechargeable batteries. Essentially, a lighter and smaller Lithium Ion Rechargeable Battery can generate the same amount of electricity as a heavier and larger battery of a different type. For example, Lithium Ion Rechargeable Batteries can be as much as 70%

lighter and 60% smaller in volume than nickel-metal hydride batteries but deliver the same amount of power.

53. Lithium Ion Rechargeable Batteries also retain their charge better than other types of rechargeable batteries. For example, Lithium Ion Rechargeable Batteries lose only about 5% of their charge per month when idle. Other types of rechargeable batteries, like nickel-metal hydride batteries, lose nearly 20% of their charge per month when idle.

54. Because of their superior performance characteristics and their small size, Lithium Ion Rechargeable Batteries have become the standard battery used in consumer electronic products. It is estimated that about 40%-50% of all Lithium Ion Rechargeable Batteries used today are used in small consumer electronic products such as cell phones and notebook computers. The remainder of Lithium Ion Rechargeable Batteries are used in digital cameras, power tools, and other devices. The following graph (which incorporates information from the Institute of Information Technology, Ltd.) depicts the various applications that Lithium Ion Rechargeable Batteries are used in:





55. Lithium Ion Rechargeable Batteries are also highly standardized products, and interchangeable among the same type and across manufacturers. International standard-setting organizations, such as the International Electrotechnical Commission (“IEC”) or the Institute of Electrical and Electronics Engineers (“IEEE”) develop standards to be followed by the manufacturers of Lithium Ion Rechargeable Batteries so that products which utilize Lithium Ion Rechargeable Batteries can be developed to accommodate a specific Lithium Ion Rechargeable Battery. For example, a Lithium Ion Rechargeable Battery “18650,” refers to a cylindrical shaped battery measuring 18.6 millimeters in diameter by 65.2 millimeters in height with a nominal voltage of 3.6 volts and a capacity of 2250mAh.

**A. Defendants’ Conspiracy Stabilized and Raised Lithium Ion Rechargeable Battery Prices Above Competitive Levels**

**1. A Conspiracy May Be Inferred from Pricing Behavior for Lithium Ion Rechargeable Batteries During the Class Period**

56. Defendants’ illegal behavior alleged herein artificially stabilized and raised the prices of Lithium Ion Rechargeable Batteries during the Class Period. Lithium Ion Battery prices were higher than they would have been absent the conspiracy.

57. Lithium Ion Rechargeable Batteries were first invented and commercially produced by Defendant Sony in or around 1991. Between 1991 and late 1999, the market for Lithium Ion Rechargeable Batteries was dominated, if not exclusively controlled by, the Sony and Panasonic Defendants located in Japan. During that time, the pricing of Lithium Ion Rechargeable Batteries was characterized by remarkable stability.

58. In or around 1999, Defendants Sony and Panasonic faced their first competitive threat from outside Japan as lower-cost manufacturers from Korea entered the market. Beginning in or around 1997, the Korean government promoted research and development centering around battery manufacturers in an effort to foster the secondary battery industry into

the next generation growth industry. As a result, around this same time, Korea established the second automated mass battery production system in the world. The Korean Battery R&D Association took the lead in the “small-size secondary battery development project” together with 11 manufacturers, 10 universities and research centers, investing \$54.87 billion over 5 years from 1997 to 2002.

59. As a result of this effort, in 1999, Defendant LG Chem became the first Korean manufacturer of Lithium Ion Rechargeable Batteries followed closely by Defendant Samsung SDI. With the introduction of competition from the Korean Defendants – LG Chem and Samsung SDI – worldwide prices for Lithium Ion Rechargeable Batteries fell precipitously. In fact, during the two-year period from 2000 – 2002, the prices for Lithium Ion Rechargeable Batteries fell by nearly 50%. Prices fell despite a strong increase in demand for Lithium Ion Rechargeable Batteries used in devices such as mobile telephones and notebook computers. A dramatic price decrease for Lithium Ion Rechargeable Batteries at this time is best explained by the entry of Defendants Samsung SDI and LG Chem into the worldwide market for these products and their aggressive competition in the marketplace. In fact, as evidence of just how competitive LG Chem and Samsung SDI were, in just three years, Samsung SDI and LG Chem went from having 0% market share in 2000 to approximately 20% of the worldwide market in 2003.

60. Defendants Sony, Panasonic, and Hitachi, sought to stem the rapid decline in Lithium Ion Rechargeable Battery prices and their rapid loss of market share due to the intense competition from their Korean counterparts – Defendants Samsung SDI and LG Chem. In or around the end of 2001, or the beginning of 2002, Defendants entered into an illegal conspiracy to stabilize and raise prices for Lithium Ion Rechargeable Batteries. This is best observed from the fact that Lithium Ion Rechargeable Batteries prices immediately stabilized after nearly a two-

year period of rapid price decreases. In fact, during the period January 2002 – July 2008, the dramatic decline of Lithium Ion Rechargeable Batteries prices that took place during 2000-2001 had completely ceased, and the prices of Lithium Ion Rechargeable Batteries prices actually rose throughout most of 2002 – 2008. The following depicts the prices of Lithium Ion Rechargeable Batteries during the Class Period:



61. As a result of the worldwide economic crisis beginning in or around 2007, and the corresponding decline in demand for Lithium Ion Rechargeable Batteries and electronic devices, the prices for Lithium Ion Rechargeable Batteries again experienced another decline. Beginning in or around January 2008, the prices for Lithium Ion Rechargeable Batteries began a steady decline which ended in or around January 2009 and resulted in a price decline of approximately 40%.

62. Corresponding with the decline in prices during 2008, Defendants dramatically cut production in an effort to maintain prices. Beginning around 2008, Defendants cut worldwide production for Lithium Ion Rechargeable Batteries by almost 66%. This dramatic

coordinated cut in production achieved its desired result – the prices for Lithium Ion Rechargeable Batteries stabilized by the end of 2009.

63. Lithium Ion Battery prices remained stable – yet again – until Defendants received notice they were being investigated for price-fixing Lithium Ion Batteries by the DOJ and the European Union which began in mid-2011. Both Japanese and Korean producer price indexes for Lithium Ion Rechargeable Batteries fell after Defendants disclosed they were being investigated. In fact, within 3 months following disclosure of the investigation in 2011, prices began an approximate 10% decline in a mere 3 months. Such a price decline would be predicted with the end of a cartel which had artificially raised prices, and supports the allegations of collusion occurring before this time.

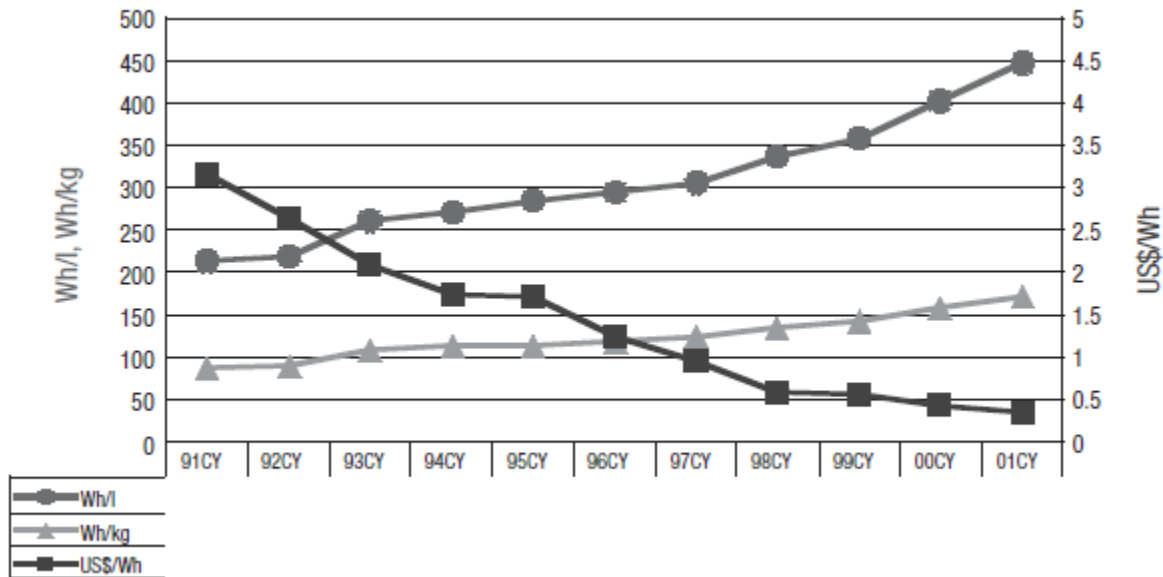
## **2. Prices for Lithium Ion Rechargeable Batteries During the Class Period Defied Industry Expectations**

64. Many analysts predicted that given the economics of the marketplace, prices of Lithium Ion Rechargeable Batteries would go down during the Class Period. But prices not only failed to decline throughout most of the Class Period – they actually rose, defying industry expectations.

65. Lithium Ion Rechargeable Batteries underwent substantial technological change that rapidly improved the energy density of the batteries (watt-hours delivered per weight or volume) and reduced costs. Energy density, measured in watt-hours per kilogram or watt-hours per liter, more than doubled for Lithium Ion Rechargeable Batteries over the decade from 1991 to 2001. Such technological progress continued unabated over the past decade – today, energy density is as high as 250 wh/kg, or 620 wh/l, for Lithium Ion Rechargeable Batteries.<sup>2</sup>

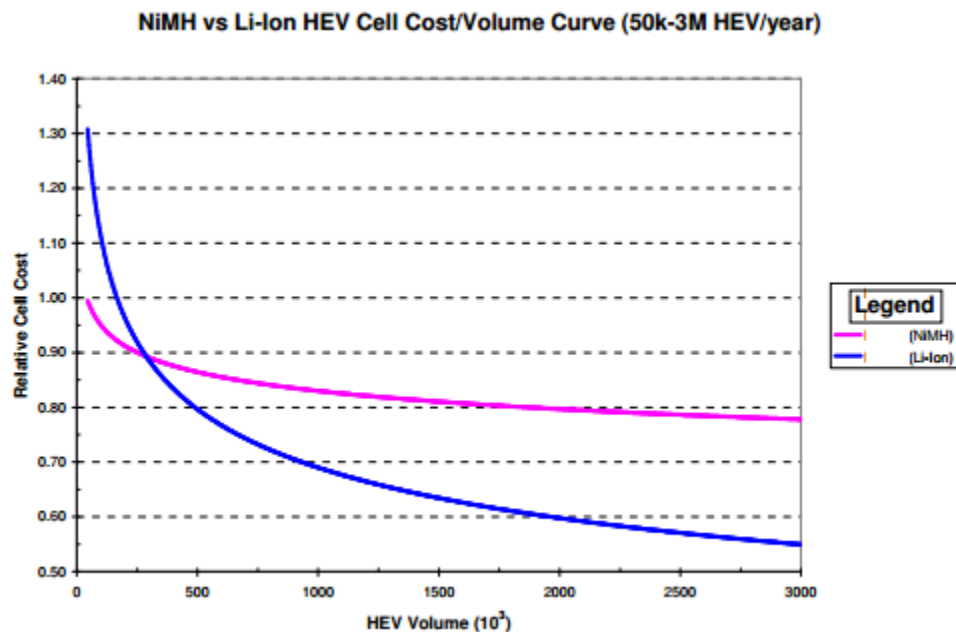
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<sup>2</sup> “Rechargeable Li-Ion OEM Battery Products.” Panasonic.com.; “Panasonic Develops New Higher-Capacity 18650 Li-Ion Cells; Application of Silicon-based Alloy in Anode.” greencarcongress.com.

**Figure One****Performance Improvement and Price Decline in Li-Ion Batteries 1991 – 2002<sup>3</sup>**

66. Scientists, engineers, and industry analysts expected to see the declining prices for Lithium Ion Rechargeable Batteries shown in Figure One to continue their steep descent during the period following 2002. Numerous technical studies undertaken in early to mid-2000s predicted that scale economies and learning curves would act to sharply lower cost as production volumes expanded. Figure Two below is typical of such predictions.

<sup>3</sup> Reproduced from R. Brodd, "Factors Affecting U.S. Production Decisions: Why are There No Volume Lithium-Ion Battery Manufacturers in the United States?" ATP Working Paper 05-01, National Institute of Standards and Technology, U.S. Department of Commerce, June 2005, pg. 62.

**Figure Two****Reduction in Li-Ion Battery Manufacturing Cost with Scale of Production<sup>4</sup>**

67. The study cited in Figure Two also notes the rapid pace of continuing technological improvement: “while the NiMH [nickel metal hydride] battery is nearing fundamental practical limits ... lithium ion batteries are still improving. With continued improvements in charge storage capability, lithium-ion’s advantage will become more pronounced with the passage of time ... Though this trend has slowed somewhat in recent years with the maturation of cobalt- and nickel metal-oxide based lithium-ion batteries, other materials have the potential to allow for continued growth.”<sup>5</sup>

<sup>4</sup> Source: Internal Studies at Ford, taken from presentation by T. Miller, “Hybrid Battery Technology and Challenges,” MIT Technology Review’s Emerging Technology Conference, (September 28, 2006), reproduced in M.A. Kromer and J.B. Heywood, “Electric Powertrains: Opportunities and Challenges in the U.S. Light-Duty Vehicle Fleet,” Publication LFEE 2007-03 RP, Laboratory for Energy and the Environment, MIT, May 2007, pg. 36 (hereafter “Kromer and Heywood”).

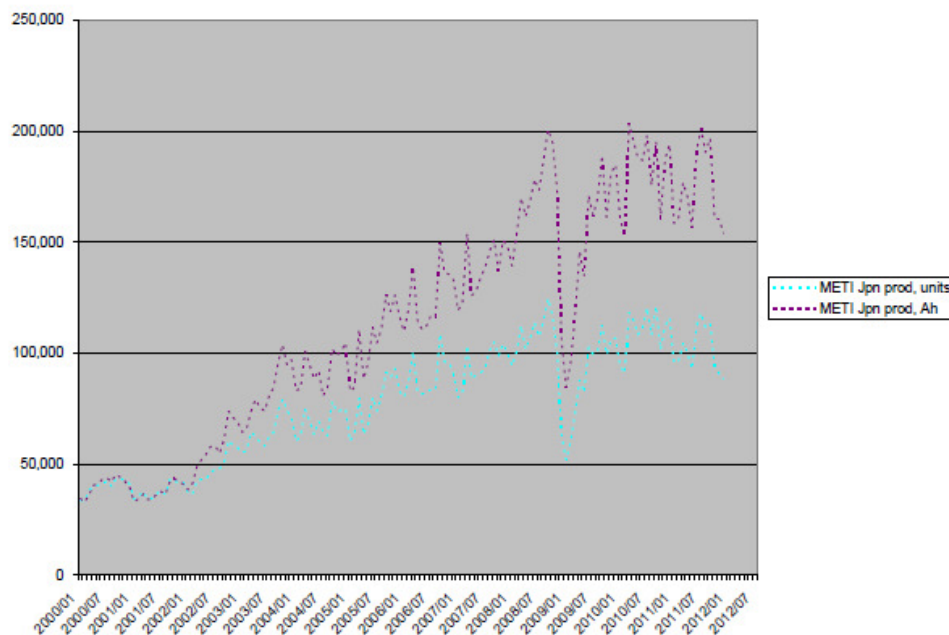
<sup>5</sup> Kromer and Heywood, p. 36.

68. The authors of this 2006 study go on to observe that, “[i]n addition to this fundamental advantage with respect to specific energy and power, lithium-ion batteries also offer the potential for lower cost as the technology matures and production volumes increase. Although more expensive than NiMH batteries today, lithium-ion batteries scale more readily to high volume production hence have greater potential for cost reduction . . . Perhaps more importantly, while the most expensive constituent materials of NiMh battery are intrinsically tied to the commodity price of nickel (relatively expensive), lithium ion batteries may be made from a number of different fungible materials . . . Over the longer-term, there is strong potential to transition to even lower cost materials.”<sup>6</sup>

69. As seen in Figure Three below, which represents production figures for Lithium Ion Rechargeable Battery cells manufactured by Japanese manufacturers (responsible for the lion’s share of global production throughout this decade), the predicted expansion in the production volume of Lithium Ion Rechargeable Batteries did indeed materialize. Batteries produced in Japan more than tripled from just below 34 million units in January 2001, to almost 118 million units in July 2011. The power provided by these technologically improved batteries increased twice as fast, by a factor of almost six over the same period from just over 34 million Ah (amp-hours), to over 200 million Ah in July 2011.

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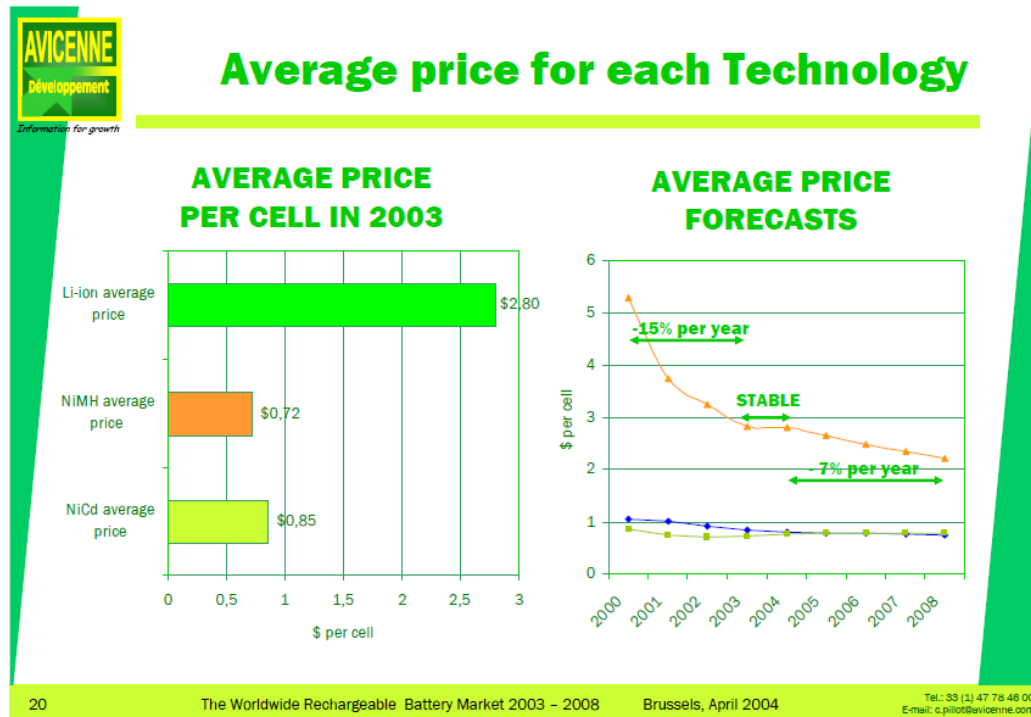
<sup>6</sup> *Id.*

**Figure Three****Increase in Production Volumes for Li-Ion Batteries in Japan 1000's of Units and Ah<sup>7</sup>**

70. Thus, analysts were confident in predicting continuing price declines in Lithium Ion Batteries at the beginning of this decade. *See* Figure Four. Basic economics supports the notion that these rapidly increasing volumes of production should have been associated with continuing price declines for Lithium Ion Rechargeable Batteries in a competitive market. After sharp price declines prior to 2002, and flat prices in 2003, industry analysts continued to predict continued annual 7% declines in Lithium Ion Rechargeable Battery prices after 2003. However, these continuing price declines predicted by both technologists and market analysts did not materialize because of the formation of the price-fixing cartel alleged in this complaint. The interruption of this trend in 2003 was viewed merely as a temporary deviation from the expected trend, rather than the beginning of a collusive effort by producers to prevent further declines in prices.

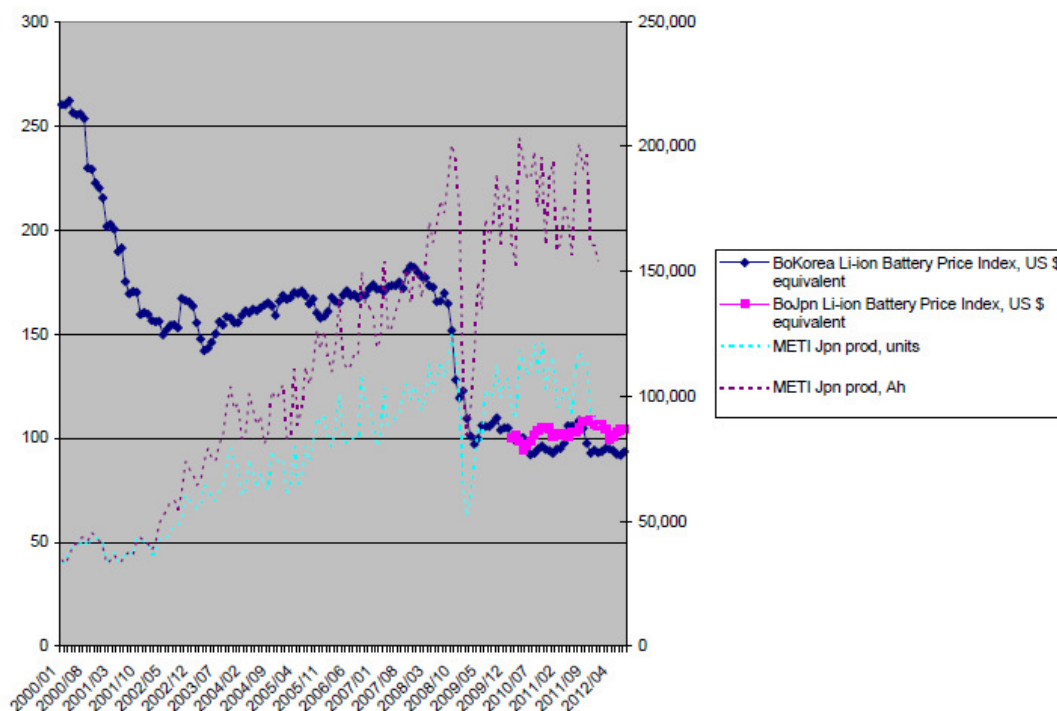
<sup>7</sup> Source: Japan, Research and Statistics Department, Ministry of Economy, Trade and Industry (METI), *Yearbook of Machinery Statistics, Monthly Report of Machinery Statistics*, various years.



**Figure Four****Historical and Forecast Prices for Batteries, April 2004<sup>8</sup>**

71. These trends in pricing are evident in the official government producer price index for Lithium Ion Rechargeable Batteries constructed by the Bank of Korea, the second most important location for Lithium Ion Rechargeable Batteries production (after Japan, which did not start producing a Lithium Ion Rechargeable Batteries price index until 2010). *See* Figure Five. A price index, unlike an average unit value for batteries, controls for changes in mix or size and qualities of batteries being produced.

<sup>8</sup> Source: International Association for Advanced Rechargeable Batteries, [www.rechargebatteries.org/MarketDataRechargeableBatteries.pdf](http://www.rechargebatteries.org/MarketDataRechargeableBatteries.pdf).

**Figure Five****Lithium-Ion Battery Price Indexes, January 2010<sup>9</sup>**

72. Figure Five shows that after the sharp decline in prices beginning in early 2000 (triggered by entry of Korean producers into the market as described above in paragraphs 60-61), the cartel members managed to arrest any continuing decline in Lithium Ion Rechargeable Battery prices, and, defying industry expectations, even increased prices, over a five year period, from early 2002 through early 2008. This effort was highly successful in not only reducing the rate of decline, but actually elevating Lithium Ion Rechargeable Battery prices until the global recession struck in 2008. At that point, as markets for the mobile consumer electronics and information technology products reliant on the use of Lithium Ion Rechargeable Batteries crashed, prices started to tumble sharply once again, at an even steeper rate than had been triggered by the Korean entry back in early 2000.

<sup>9</sup> Source: Bank of Korea, Bank of Japan. Price indexes have been converted to dollar equivalents using Federal Reserve exchange rate data.

**3. Defendants' Pricing and Production Levels in Response to the Global Economic Crisis in 2008 Further Supports the Existence of the Conspiracy**

73. As the global recession reduced demand for the devices which use Lithium Ion Rechargeable Batteries, prices for these batteries also dropped. In fact, prices for Lithium Ion rechargeable Batteries would fall roughly 34% from August 2008 through January 2009. Faced with rapidly decreasing prices during this time, cartel members sharply cut back production of Lithium Ion Rechargeable Batteries. Figure Five shows that the Japanese cartel members dramatically cut production from 125 million units per month in September of 2008, to 52 million units per month in January of 2009, engineering a reduction in output of 58%, over a period of just four months. (Alternatively, if measured by the power capacity – Ah – of the batteries, the same 58% reduction occurred). Then, just five months later, Japanese production shot back up to near pre-economic crisis levels to approximately 103 million units per month.

74. Defendants' near 60% reduction in output successfully arrested further decline in prices, while the continuing restraint in not resuming production growth after 2008 successfully stabilized prices at a roughly constant level and stemmed further price declines.

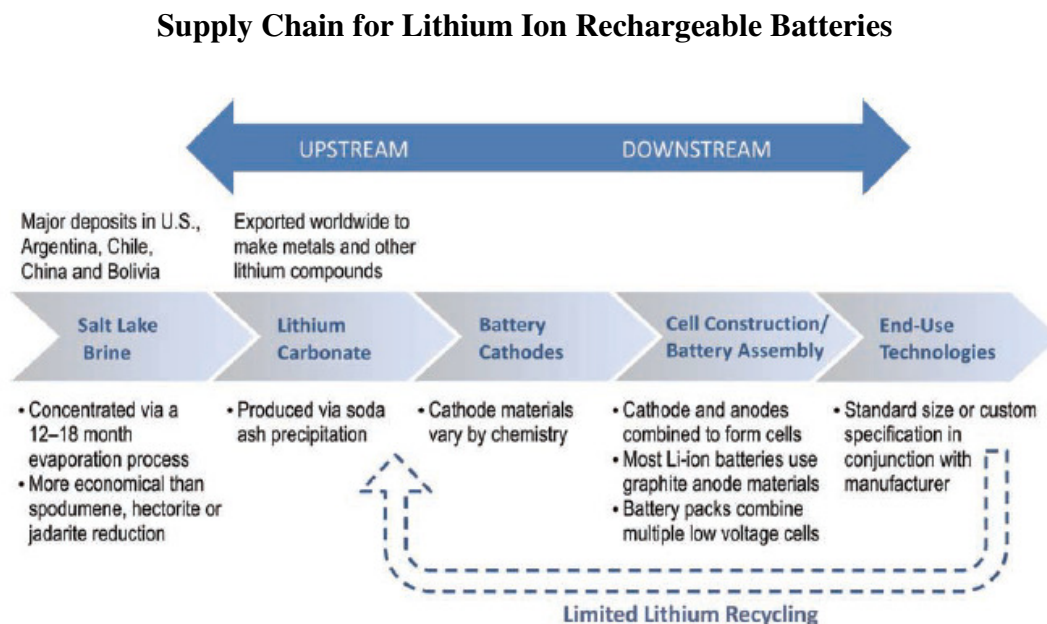
75. Economic principles teach that when producers are behaving competitively, they expand output to where price just covers the incremental or marginal cost of the last unit produced. Defendants' reduction in production by 58% – only to increase output five months later to nearly the same production levels (while holding prices the same) – is not plausibly the result of competitive forces.

76. This production and pricing behavior is better (more plausibly) explained by the existence of an anti-competitive agreement, because when Defendants raised production a mere five months later, *[they maintained prices at the same level as before the reduction in output]*. In other words, Defendants' production and pricing behavior would only be consistent with

competition if incremental production costs had somehow been cut by a huge amount – 34% – over the intervening five months. This could then possibly support an inference of competitive prices remaining at the same levels when production returned to nearly the same levels. But as shown below, input costs for Lithium Ion Rechargeable Batteries do not explain Defendants' pricing and production behavior.

77. The two most important raw materials used to manufacture Lithium Ion Rechargeable Batteries are lithium carbonate and cobalt. However, prices for these raw materials do not explain Defendants' changes to Lithium Ion Rechargeable Battery prices and production levels. Figure Six shows the supply chain for making Lithium Ion Rechargeable Batteries taken from a recent U.S. government report.<sup>10</sup>

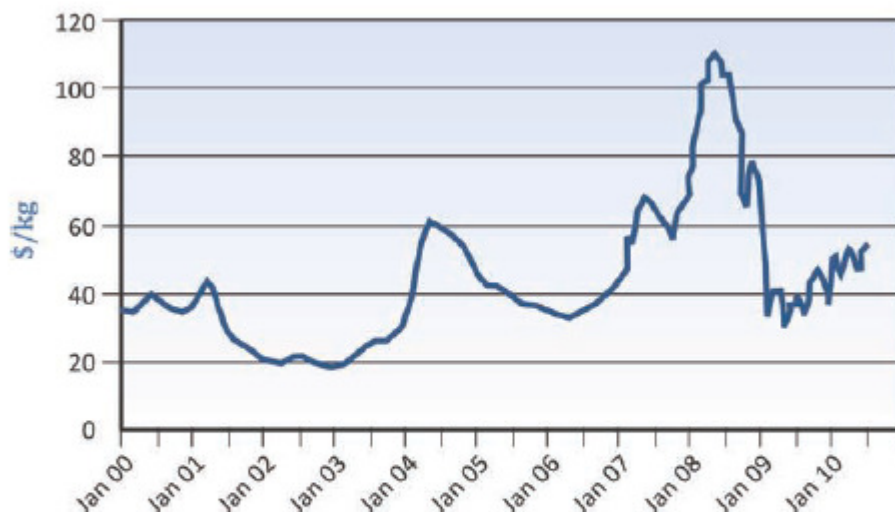
**Figure Six**



78. Significant increases in cobalt prices in 2004 and 2008 were not mirrored by the slight rate of increase associated with Lithium Ion Rechargeable Battery prices during the 2002 through early 2008 time period. And when the global recession hit in 2008, cobalt prices, like

<sup>10</sup> U.S. Department of Energy, *Critical Materials Strategy*, December 2010, p. 19.

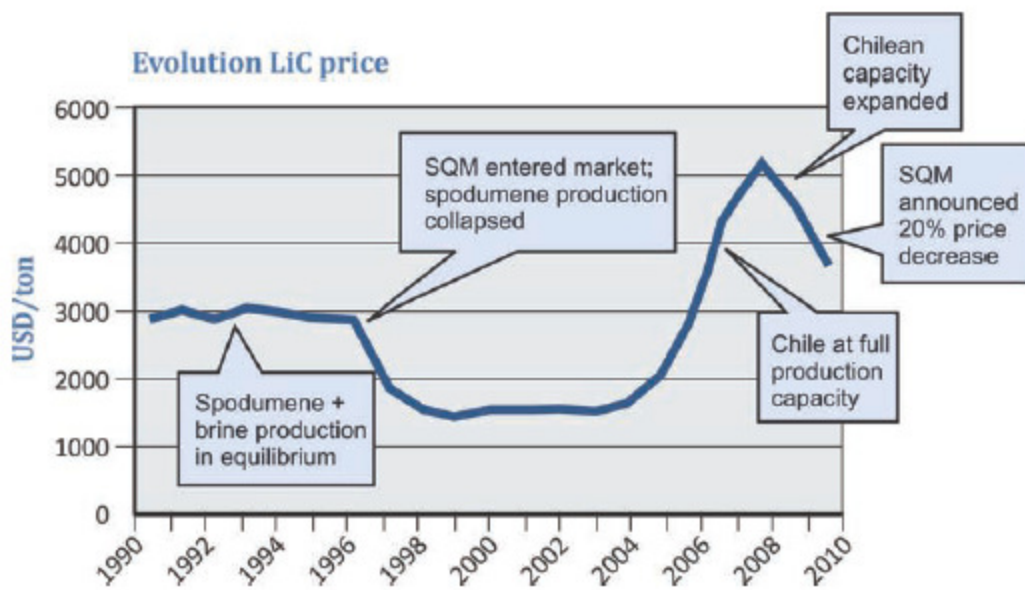
many other prices (including Lithium Ion Rechargeable Battery prices) fell. But when cobalt prices rose again from early 2009 through early 2010, Lithium Ion Rechargeable Batteries did not track these price increases and large declines in cobalt prices in 2004-2005 were not mirrored by the rate of increase of Lithium Ion Rechargeable Battery prices during that time period.



**Figure 3-5. Cobalt prices from January 2000 to January 2010**  
*Source: Arnold Magnetic Technologies 2010*

*Id.* at p. 46.

79. Similarly, Lithium Ion Rechargeable Battery price changes are not readily explained by the price movements for another important raw material – lithium carbonate (LiC). The period from 2000-2004 basically saw flat LiC prices, while Lithium Ion Rechargeable Battery prices dropped precipitously through 2002, then grew at a very slow rate. Then, LiC prices more than doubled from 2005-2007 after this flat 2000-2004 period, whereas Lithium Ion Rechargeable Battery prices continued with a slight rate of growth very similar to the 2002-2004 period. LiC prices dropped sharply during 2009-2010, while Lithium Ion Rechargeable Battery prices were basically flat.



**Figure 3-6. Lithium prices from 1990-2010**

Source: Umicore 2010

*Id.* at p. 47.

80. Further, the steep price swings of Lithium Ion Rechargeable Batteries are not likely explained by changes in costs for capital, labor, and energy. There were no drastic six-month swings in these costs.

#### **B. The Structure and Characteristics of the Lithium Ion Rechargeable Batteries Market Render the Conspiracy More Plausible**

81. In addition to Lithium Ion Rechargeable Battery pricing and production levels supporting the existence of a conspiracy, the structure and other characteristics of the Lithium Ion Rechargeable Battery market are conducive to a price-fixing agreement, and have made collusion particularly attractive in this market. Specifically, the Lithium Ion Rechargeable Batteries market: (1) has high barriers to entry; (2) has inelasticity of demand; and (3) is highly concentrated.

**1. The Lithium Ion Rechargeable Batteries Market Has High Barriers to Entry**

82. A collusive arrangement that raises product prices above competitive levels would, under basic economic principles, attract new entrants seeking to benefit from the supra-competitive pricing. Where there are significant barriers to entry, however, new entrants are less likely. Thus, barriers to entry help to facilitate the formation and maintenance of a cartel.

83. There are substantial barriers that preclude, reduce, or make entry more difficult into the Lithium Ion Rechargeable Batteries market. A new entrant into the business would face costly and lengthy start-up costs, including multi-million dollar costs associated with research and development, manufacturing plants and equipment, energy, transportation, distribution, infrastructure, skilled labor and long-standing customer relationships.

84. It has been estimated that the cost to build a plant to manufacture Lithium Ion Rechargeable Batteries that is capable of producing three million cells per month is approximately \$3-\$4 per cell. Thus, a plant making three million cells per month would cost approximately \$108-\$144 million. This estimate does not include the cost of research, development, and engineering that produced the technology and equipment designs for the plant.

85. In addition to the large costs of building a plant, given the nature of the materials used in Lithium Ion Rechargeable Batteries, any new entrant will be required to comply with various environmental regulations in whatever jurisdiction such plant is built. Compliance with such regulations will require extensive testing and the receipt of government approvals, all of which will take many years.

**2. The Demand for Lithium Ion Rechargeable Batteries Is Inelastic**

86. “Elasticity” is a term used to describe the sensitivity of supply and demand to changes in one or the other. For example, demand is said to be “elastic” if an increase in the price of a product results in diminished revenues, with declines in the quantity sold of that



product outweighing the effects of higher prices on the value of sales. For products with a highly elastic demand, a price increase results in a large drop in the value of sales. In other words, customers have many feasible alternatives for cheaper products of similar quality, and cut purchases sharply in the face of even a small price increase.

87. For a cartel to profit from raising prices above competitive levels, market demand must be relatively less elastic at competitive prices. That is, an increase in prices should not cause a huge decline in demand. Otherwise, increased prices would result in sharply declining sales, as some customers purchased substitute products or declined to buy altogether. A less elastic demand is a market characteristic that facilitates collusion, allowing producers to raise their prices without triggering customer substitution and sufficient lost sales revenues as to offset the beneficial effect of higher prices on profits for products they still continue to sell.

88. Demand for Lithium Ion Rechargeable Batteries is not very elastic because there are no close substitutes for these products.

**3. The market for Lithium Ion Rechargeable Batteries is highly concentrated.**

89. Market concentration facilitates collusion. If an industry is divided into a large number of small firms, the current gain from cheating on a cartel (profits from sales captured from other cartel members through undercutting of the cartel-fixed price in the current time period, which risks causing the cartel to fall apart in the future) is large relative to the firm's possible gains from the cartel's continuing future success (the firm's future share of the total cartel profits if collusion were to continue successfully). Conversely, with a more concentrated industry, a greater share for a colluding firm in future cartel profits tips the balance in favor of continued collusion, and away from any short-term, transitory bump in profits that could be achieved by undercutting the cartel price and gaining a transitory increase in market share.



90. Empirical scholarship on cartels has primarily focused on a concentration measure called the  $CR_4$  – the four-firm concentration ratio, the share of product sales accounted for by the four largest firms – as a diagnostic in analyzing what levels of concentration facilitate multi-firm collusion.<sup>11</sup>

91. A seminal published study of DOJ price-fixing investigations found that 76% of these cartels occurred in sectors with  $CR_4$  of 50% or greater, which was about double the average  $CR_4$  for manufacturing. Fully a quarter of these cartels therefore, were still organized in markets with a less than 50% share held by the four largest firms.<sup>12</sup>

92. The  $CR_4$  exceeded 60% in the market for Lithium Ion Rechargeable Batteries for all of the proposed Class Period, topping 80% in some years. The market share of the alleged cartel members never fell below 70%, and reached almost 90% in some years.

### **C. Government Investigations**

93. A globally coordinated antitrust investigation is taking place in at least the United States and Europe, aimed at suppliers of Lithium Ion Rechargeable Batteries.

94. In or around May 2011, Defendant Sony Corporation disclosed that its wholly owned U.S. subsidiary – Sony Electronics, Inc. – received a subpoena from the Antitrust Division of the DOJ concerning its “secondary batteries” business. Specifically, Sony disclosed that:

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<sup>11</sup> The advantage of the  $CR_4$  in predicting the relationship between concentration and the likelihood of collusion is that it does not vary with the degree of asymmetry in an industry (unlike the Herfindahi-Hirschman index (HHI), which as Motta notes, “confounds two factors – higher average market share and asymmetry”). Motta observes that if “the measure of concentration does not vary with asymmetry – as for the concentration ratios,  $C_k$ , that sum the market shares of the  $k$  largest firms in the industry – then an increase in measured concentration should correspond to a higher likelihood of collusion.” M. Motta, *Competition Policy, Theory and Practice* (Cambridge: Cambridge University Press), 2004, p. 143.

<sup>12</sup> See G.A. Hay & D. Kelley, “An Empirical survey of Price-Fixing Conspiracies,” *Journal of Law and Economics*, Vol. 17, 1974.

In May 2011, Sony Corporation's U.S. subsidiary, Sony Electronics, Inc., received a subpoena from the U.S. Department of Justice ("DOJ") Antitrust Division seeking information about its secondary battery business. Sony understands that the DOJ and agencies outside the United States are investigating competition in the secondary batteries market. Based on the stage of the proceedings, it is not possible to estimate the amount of loss or range of possible loss, if any, that might result from adverse judgments, settlements or other resolution of this matter.

Sony Corporation Form 20-F for fiscal year ending March 31, 2012, p. 114.

95. Around the same time, according to a Korean news article, a source from the U.S. DOJ confirmed that it was conducting a criminal investigation into potential price fixing with respect to the sale of secondary batteries in the U.S. since the first half of 2011. The same article quoted the source as stating that the investigation is in its final stages and that criminal charges are likely to be filed.

96. On or about August 20, 2012, LG Chem confirmed that it also was the target of the investigation being conducted by the U.S. DOJ.

97. Other news articles have confirmed that in addition to Defendants Sony and LG Chem, Samsung SDI and Panasonic are also under investigation by the DOJ for price fixing with respect to the sale of rechargeable batteries.

98. It is significant that Defendants' anti-competitive behavior is the subject of a criminal grand jury investigation being conducted by the DOJ. In order for the DOJ to institute a grand jury investigation, a DOJ Antitrust Division attorney must believe that a crime has been committed and prepare a detailed memorandum to that effect.<sup>13</sup> Following a review of that memorandum, the request for a grand jury must be approved by the Assistant Attorney General

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<sup>13</sup> See Antitrust Grand Jury Practice Manual, Vol. 1, Ch. 1.B.1 (1991) ("If a Division attorney believes that a criminal violation of the antitrust laws has occurred, he should prepare a memorandum requesting authority to conduct a grand jury investigation.") (available at <http://www.justice.gov/atr/public/guidelines/206542.htm>) (last accessed October 16, 2012).

for the Antitrust Division, based on the standard that a criminal violation may have occurred. In addition, the fact that the DOJ Antitrust Division investigation is criminal, as opposed to civil, is significant as well. The Antitrust Division's "Standards for Determining Whether to Proceed by Civil or Criminal Investigation" states: "[i]n general, current Division policy is to proceed by criminal investigation and prosecution in cases involving horizontal, *per se* unlawful agreements such as price fixing, bid rigging, and customer and territorial allocations."<sup>14</sup> Accordingly, the existence of a criminal investigation into the market for Lithium Ion Rechargeable Batteries supports the existence of the conspiracy alleged in this complaint.

**D. Defendants Have a History of Colluding to Fix Prices for Critical Components of Consumer Electronics**

99. Many of the Defendants have a long history of criminal collusion and are either currently involved in worldwide investigations into other technology-related products or have been convicted of participating in price-fixing cartels involving technology-related products. Further, much of the illegal conduct which the Defendants or their affiliates have admitted to took place during the Class Period identified in this complaint.

100. A notebook computer contains four key pieces of hardware: a DRAM chip, an LCD screen, an ODD, and a rechargeable lithium-ion battery. Defendants here have pled guilty to fixing the prices of the first three of these components, and the DOJ is investigating whether to bring criminal price-fixing charges for the fourth component – Lithium Ion Rechargeable Batteries.

101. In or around October 2005, Samsung Electronics Company, Ltd. and Samsung Semiconductor, Inc. agreed to plead guilty and pay a \$300 million fine for "participating in an international conspiracy to fix prices in the DRAM market ...." Samsung Electronics Company,

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<sup>14</sup> See Antitrust Division Manual, Chapter III.C.5, III-20 (2009) (available at <http://www.justice.gov/atr/public/divisionmanual/chapter3.pdf> (last accessed October 16, 2012)).

Ltd. and Samsung Semiconductor, Inc. admitted that they participated in the conspiracy from approximately April 1, 1999 through June 15, 2002. In addition, seven Samsung executives (Il Ung Kim, Sun Woo Lee, Yeongho Kang, Young Woo Lee, Thomas Quinn, Young Hwan Park, Young Bae Rha) agreed to plead guilty to participating in the conspiracy with respect to DRAM. Each agreed to pay a \$250,000 criminal fine and serve a prison sentence in the United States ranging from seven to fourteen months.

102. Although it has not been publicly acknowledged, it is widely believed that Samsung is in the DOJ leniency program with respect to the DOJ's investigation into the market for LCDs, meaning that it has admitted its participation in the cartel.

103. In November 2008, LG Display Co., Ltd., a wholly owned Korean subsidiary of LG Electronics, agreed to plead guilty and pay a \$400 million fine to the United States, in connection with its participation in a worldwide conspiracy to fix the prices of LCDs during the period from September 2001 through June 2006. At the time, the fine paid by LG was the second highest fine ever imposed by the Antitrust Division of the DOJ. In addition, in April 2009, an executive of LG Display, Bock Kwon, agreed to plead guilty to participating in the global LCD conspiracy from September 2001 through June 2006. Kwon, a Korean national, agreed to serve 12 months in a U.S. prison and pay a \$30,000 criminal fine. Further, in February 2009, another LG Display executive, Duk Mo Koo, agreed to plead guilty to participating in the global conspiracy with respect to LCDs from September 2001 through December 2006.

104. In March 2009, Hitachi Displays, Ltd., a wholly owned Japanese subsidiary of Hitachi, Ltd., agreed to plead guilty and pay a \$31 million fine for participating in a worldwide conspiracy to fix the prices of LCDs during the period April 1, 2001 through March 31, 2004.

105. In September 2011, an entity which is a joint venture between Hitachi, Ltd. and LG Electronics, Inc. – Hitachi-LG Data Storage, Inc. – agreed to plead guilty and pay a \$21.1

million fine for participating in various conspiracies to rig bids and fix prices for ODDs during the period from June 2004 through September 2009. In addition, three Hitachi-LG Data Storage executives also agreed to plead guilty for participating in the same conspiracy. In December 2011, Yong Kuen Park, Sang Hun Kim, and Sik Hur agreed to plead guilty for participating in the conspiracy with respect to ODDs during the period November 2005 through September 2009. All three agreed to serve prison time in the United States and pay criminal fines.

106. Defendants have also entered guilty pleas for fixing prices for other high-tech products.

107. In or around March 2011, Defendant Samsung SDI agreed to plead guilty and pay a \$32 million fine for participating in a “global conspiracy to fix prices, reduce output, and allocate market share of color display tubes, a type of cathode ray tube used in computer monitors and other specialized applications ....”<sup>15</sup> Samsung SDI admitted it participated in the conspiracy from approximately January 1997 through at least March 2006.

108. In September 2010, Defendant Panasonic Corporation agreed to plead guilty and pay a \$49.1 million fine for participating in a conspiracy to “suppress and eliminate competition by fixing prices to customers of household compressors ....” during the period October 14, 2004 through December 31, 2007. *USA v. Panasonic Corp.*, 2:10-cv-20576, Sep. 30, 2010 (E.D. Mich.)

## **V. MANNER AND MEANS OF THE CONSPIRACY**

109. For purposes of forming and carrying out the charged combination and conspiracy, Defendants did those things that they combined and conspired to do, including, among other things:

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<sup>15</sup> Samsung SDI Agrees to Plead Guilty in Color Display Tube Price-Fixing Conspiracy, DOJ Office of Public Affairs, March 18, 2011.

a. participating in meetings, conversations and communications in the United States, Japan, Korea and elsewhere to discuss the prices of Lithium Ion Rechargeable Batteries in the United States and elsewhere;

b. agreeing, during those meetings, conversations and communications, on prices for Lithium Ion Rechargeable Batteries sold in the United States and elsewhere;

c. agreeing, during those meetings, conversations and communications, to depress the supply of Lithium Ion Rechargeable Batteries;

d. agreeing, during those meetings, conversations and communications, to coordinate prices for Lithium Ion Rechargeable Batteries sold in the United States and elsewhere;

e. selling Lithium Ion Rechargeable Batteries in the United States and elsewhere at collusive and noncompetitive prices;

f. accepting payment for Lithium Ion Rechargeable Batteries at collusive and non-competitive prices;

g. engaging in meetings, conversations and communications in the United States and elsewhere for the purpose of monitoring and enforcing adherence to the agreed-upon price-fixing scheme; and

h. employing measures to keep their conduct secret.

## **VI. THE INFLATED PRICES OF LITHIUM ION RECHARGEABLE BATTERIES WERE PASSED THROUGH TO CONSUMERS**

110. Defendants' conspiracy to fix the price of Lithium Ion Rechargeable Batteries at artificial levels resulted in harm to Plaintiff and the classes because it resulted in them paying higher prices for Lithium Ion Rechargeable Battery Products than they would have in the absence of Defendants' conspiracy.

111. Lithium Ion Rechargeable Batteries are commodity-like products with functionally equivalent products available from Defendants. Defendants manufacture Lithium Ion Rechargeable Batteries pursuant to standard specifications.

112. A Lithium Ion Rechargeable Battery is purchased by a consumer as a stand-alone product, or as a substantial part of a Lithium Ion Rechargeable Battery Product. When a Lithium Ion Rechargeable Battery is purchased by consumers as a stand-alone product, the battery or the cell inside the battery itself is directly traceable to the specific manufacturing defendant. When a Lithium Ion Rechargeable Battery is purchased as part of a Lithium Ion Rechargeable Battery Product, it is a distinct, physically discrete element of the end-use product and is identifiable by a specific, discrete part or model number that permits tracing. Lithium Ion Rechargeable Batteries are traceable and identifiable throughout the chain of distribution to the end user. They do not undergo any physical alterations as they move through the chain of distribution.

113. The purchaser buys a Lithium Ion Rechargeable Battery either from the direct purchaser OEM or through a reseller such as a retailer. Thus, a Lithium Ion Rechargeable Battery follows a traceable physical chain from the Defendants to the OEMs, to the purchaser of the Lithium Ion Rechargeable Battery Product. Tracing can help show that changes in the prices paid by direct purchasers of Lithium Ion Rechargeable Batteries affect prices paid by indirect purchasers of the Lithium Ion Rechargeable Batteries themselves, or Lithium Ion Rechargeable Battery Products.

114. The OEM and the retail markets of Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products are subject to vigorous price competition. The direct purchaser OEMs and retailers have very thin net margins. They are therefore at the mercy of their component costs, such that increases in the price of Lithium Ion Rechargeable Batteries

lead to quick, corresponding price increases at the OEM and retail levels for Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products.

115. As a result, the inflated prices of Lithium Ion Rechargeable Batteries resulting from Defendants' price-fixing conspiracy have been passed on to Plaintiff and the classes by direct purchasers, manufacturers, distributors and retailers.

116. Lithium Ion Rechargeable Batteries make up a substantial component cost of Lithium Ion Rechargeable Battery Products. The retail price of a Lithium Ion Rechargeable Battery Product is determined in substantial part by the cost of the Lithium Ion Rechargeable Battery it contains.

117. Thus, Plaintiff and members of the classes have been forced to pay supra-competitive prices for Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products. These inflated prices have been passed on to them by direct purchaser manufacturers, distributors, and retailers.

## **VII. TRADE AND COMMERCE**

118. During the period covered by this complaint, Defendants sold to manufacturers located in various states in the United States substantial quantities of Lithium Ion Rechargeable Battery Products shipped from outside the United States and from other states in a continuous and uninterrupted flow of interstate and foreign trade and commerce. In addition, substantial quantities of equipment and supplies necessary to the production and distribution of Lithium Ion Rechargeable Battery Products, as well as payments for Lithium Ion Rechargeable Battery Products and related products sold by Defendants, traveled in interstate and foreign trade and commerce. The business activities of Defendants in connection with the production and sale of Lithium Ion Rechargeable Battery Products that were the subject of the charged conspiracy were within the flow of, and substantially affected, interstate and foreign trade and commerce.



### **VIII. CLASS ACTION ALLEGATIONS**

119. Plaintiff brings this action on behalf of himself and as a class action under Rule 23(a) and (b)(2) of the Federal Rules of Civil Procedure, seeking equitable and injunctive relief on behalf of the following class (the “Nationwide Class”):

All persons residing in the United States that indirectly purchased for their own use and not for resale either a Lithium Ion Rechargeable Battery containing a cell manufactured by a Defendant and/or a Lithium Ion Rechargeable Battery Product containing a Lithium Ion Rechargeable Battery containing a cell manufactured by a Defendant, during the period January 1, 2002 to the present.

120. Plaintiff also brings this action on behalf of himself and as a class action under Rule 23(a) and (b)(3) of the Federal Rules of Civil Procedure seeking damages pursuant to the state antitrust, unfair competition, and consumer protection laws on behalf of the following class (the “Tennessee Indirect Purchaser Class”):

All persons residing in Tennessee who indirectly purchased in Tennessee for their own use and not for resale either a Lithium Ion Rechargeable Battery containing a cell manufactured by a Defendant and/or a Lithium Ion Rechargeable Battery Product containing a Lithium Ion Rechargeable Battery containing a cell manufactured by a Defendant during the period January 1, 2002 through 2011.

121. The Nationwide Class and the Tennessee Indirect Purchasers Class are referred to herein as the “Classes.” Excluded from the Classes are Defendants, their parent companies, subsidiaries and affiliates, any co-conspirators, federal governmental entities and instrumentalities of the federal government, states and their subdivisions, agencies and instrumentalities, and persons who purchased Lithium Ion Rechargeable Battery Products directly or for resale.

122. While Plaintiff does not know the exact number of the members of the Classes, Plaintiff believes there are hundreds of thousands of members in the Nationwide Class and thousands of members in the Tennessee Indirect Purchaser Class.

123. The members of the Classes are so numerous and geographically dispersed that joinder of all members is impracticable.

124. There are questions of law and fact common to the Classes, which relate to the existence of the conspiracies alleged, and the type of common pattern of injury sustained as a result thereof. These common questions of law and fact predominate over any questions solely affecting individual members of the Classes. Questions of law and fact common to the classes' members include, but are not limited to:

- a. whether Defendants engaged in agreements to fix the prices of Lithium Rechargeable Batteries sold in the United States;
- b. the identity of the participants in the conspiracies;
- c. the duration of the alleged conspiracy and the nature and character of the acts performed by Defendants and their co-conspirators in furtherance of the conspiracy;
- d. whether the alleged conspiracy violated §1 of the Sherman Act, 15 U.S.C. §1;
- e. whether the alleged conspiracy violated Tennessee Code Ann. §§47-25-101, *et seq.*;
- f. whether Defendants unjustly enriched themselves to the detriment of Plaintiff and the members of the Classes;
- g. whether the conduct of Defendants and their co-conspirators, as alleged in this Complaint, caused injury to Plaintiff and other members of the Classes;
- h. the appropriate measure of damages sustained by Plaintiff and other members of the Classes; and

i. the appropriate injunctive relief.

125. Plaintiff's claims are typical of the claims of the other members of the Classes, and Plaintiff will fairly and adequately protect the interests of the members of the Classes. Plaintiff and all members of the Classes are similarly affected by Defendants' wrongful conduct in that they paid artificially inflated prices for Lithium Ion Rechargeable Batteries or Lithium Ion Rechargeable Battery Products purchased indirectly from the Defendants.

126. Plaintiff's claims arise out of the same common course of conduct giving rise to the claims of other members of the Classes. Plaintiff's interest is coincident with and not antagonistic to those of the other members of the Classes. In addition, Plaintiff is represented by counsel who are competent and experienced in the prosecution of antitrust and class action litigation.

127. The questions of law and fact common to the members of the Classes predominate over any questions affecting only individual members, including legal and factual issues relating to liability and damages.

128. A class action is superior to other available methods for the fair and efficient adjudication of this controversy. The Class is readily definable and is one for which records should exist in the files of Defendants and their co-conspirators. Prosecution as a class action will also eliminate the possibility of repetitious litigation. Treatment as a class action will permit a large number of similarly situated persons to adjudicate their common claims in a single forum simultaneously, efficiently, and without duplication of effort and expense that numerous individual actions would engender. Treatment of this case as a class action will also permit the adjudication of relatively small claims by many Class members who otherwise could not afford to litigate an antitrust claim such as is asserted in this Complaint. Absent a class action, Defendants will retain substantial funds received as a result of their wrongdoing, and such

unlawful and improper conduct shall, in large measure, go unremedied. This class action presents no difficulties of management that would preclude its maintenance as a class action.

129. The prosecution of separate actions by individual members of the Classes would create a risk of inconsistent or varying adjudication, establishing incompatible standards of conduct for Defendants.

## **IX. ANTITRUST INJURY**

130. The effect of Defendants' conduct as described herein has been to artificially inflate the prices paid by Plaintiff and members of the Classes for Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products.

## **X. FRAUDULENT CONCEALMENT AND TOLLING**

131. Throughout the Class Period, Defendants engaged in a successful, illegal price-fixing and supply control conspiracy that was self-concealing. Defendants effectively, affirmatively and fraudulently concealed their unlawful combination, conspiracy and acts in furtherance thereof from Plaintiff and the members of the Classes.

132. Plaintiff did not know nor could have known that prices for Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products were artificially inflated and maintained by virtue of Defendants' illegal price-fixing conspiracy, and that Plaintiff and members of the Classes were paying higher prices. Information concerning the various government investigations in the Lithium Ion Rechargeable Battery industry did not emerge until the first half of 2011. It was not until this time that Plaintiff and members of the Classes had any facts or information concerning Defendants' illegal conduct.

133. Plaintiff has exercised due diligence by promptly investigating the facts giving rise to the claims asserted herein upon having reasonable suspicion of the existence of Defendants' conspiracy.

134. As a result of Defendants' fraudulent concealment of their conspiracy, the running of any statute of limitations has been tolled with respect to any claims that Plaintiff and the members of the Classes have as a result of the anti-competitive conduct alleged in this complaint.

**FIRST COUNT**  
**VIOLATION OF SECTION ONE OF THE SHERMAN ACT**  
*(On Behalf of Plaintiff and the Nationwide Class)*

135. Plaintiff incorporates and realleges, as though fully set forth herein, each of the paragraphs set forth above.

136. Defendants and unnamed co-conspirators entered into and engaged in a contract, combination, or conspiracy in unreasonable restraint of trade in violation of Section One of the Sherman Act (15 U.S.C. §1).

137. Beginning as early as 2002 and continuing through the present, the exact date being unknown to Plaintiff and exclusively within the knowledge of Defendants, Defendants and their co-conspirators entered into a continuing contract, combination or conspiracy to unreasonably restrain trade and commerce in violation of Section 1 of the Sherman Act (15 U.S.C. §1) by artificially reducing or eliminating competition in the United States.

138. In particular, Defendants have combined and conspired to raise, fix, maintain or stabilize the prices of Lithium Ion Rechargeable Batteries.

139. As a result of Defendants' unlawful conduct, prices for Lithium Ion Rechargeable Batteries were raised, fixed, maintained, and stabilized in the United States.

140. The contract, combination or conspiracy among Defendants consisted of a continuing agreement, understanding, and concerted action among Defendants and their co-conspirators.

141. For purposes of formulating and effectuating their contract, combination, or conspiracy, Defendants and their co-conspirators did those things they contracted, combined, or conspired to do, including:

- a. exchanged information on prices charged for Lithium Ion Rechargeable Batteries;
- b. agreed to raise, fix, and maintain prices for Lithium Ion Rechargeable Batteries;
- c. raised, fixed, and maintained prices for Lithium Ion Rechargeable Batteries;
- d. allocated markets for Lithium Ion Rechargeable Batteries; and
- e. sold Lithium Ion Rechargeable Batteries throughout the U.S. at non-competitive prices.

142. As a result of Defendants' unlawful conduct, Plaintiff and the other members of the Class have been injured in their businesses and property in that they have paid more for Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products than they otherwise would have paid in the absence of Defendants' unlawful conduct.

143. The alleged contract, combination or conspiracy is a *per se* violation of the federal antitrust laws.

144. These violations are continuing and will continue unless enjoined by this Court.

145. Pursuant to Section 16 of the Clayton Act, 15 U.S.C. §26, Plaintiff and the Class seek the issuance of an injunction against Defendants, preventing and restraining the violations alleged herein.

**SECOND COUNT**  
**VIOLATION OF STATE ANTITRUST AND RESTRAINT OF TRADE LAWS**  
*(On Behalf of Plaintiff and the Tennessee Indirect Purchaser Class)*

146. Plaintiff incorporates and realleges, as though fully set forth herein, each of the paragraphs set forth above.

147. Defendants' combinations or conspiracies had the following effects: (1) Lithium Ion Rechargeable Batteries price competition was restrained throughout Tennessee; (2) Lithium Ion Rechargeable Batteries prices were fixed at artificially high levels throughout Tennessee; (3) Tennessee Plaintiff and members of the Class were deprived of free and open competition; and (4) Tennessee Plaintiff and members of the Tennessee Indirect Purchaser Class paid supracompetitive, artificially inflated prices for Lithium Ion Rechargeable Batteries.

148. During the Class Period, Defendants' illegal conduct had a substantial effect on Tennessee commerce as products containing Lithium Ion Rechargeable Batteries were sold in Tennessee.

149. As a direct and proximate result of Defendants' unlawful conduct, Tennessee Plaintiff and members of the Tennessee Indirect Purchaser Class have been injured in their business and property and are threatened with further injury.

150. By reason of the foregoing, Defendants have entered into agreements in restraint of trade in violation of Tennessee Code Ann. §§47-25-101, *et seq.* Accordingly, Tennessee Plaintiff and all members of the Tennessee Indirect Purchaser Class seek all relief available under Tennessee Code Ann. §§47-25-101, *et seq.*

**THIRD COUNT**  
**UNJUST ENRICHMENT**  
*(On Behalf of Plaintiff and the Tennessee Indirect Purchaser Class)*

151. Plaintiff incorporates and realleges, as though fully set forth herein, each of the paragraphs set forth above.

152. To the detriment of Plaintiff and Class Members, Defendants have been and continue to be unjustly enriched as a result of the unlawful and/or wrongful conduct alleged herein. Defendants have unjustly benefited by receiving higher prices for Lithium Ion Rechargeable Batteries, which higher prices were passed along to consumers, and would otherwise not have been possible absent the unlawful and/or wrongful conduct.

153. Between the parties and under Tennessee law, it would be unjust for Defendants to retain the benefits attained by their actions. Accordingly, Plaintiff and Class Members seek full restitution of Defendants' enrichment, benefits and ill-gotten gains acquired as a result of the unlawful and/or wrongful conduct alleged herein on behalf of the Tennessee Indirect Purchaser Class.

WHEREFORE, Plaintiff and Class members pray for relief as set forth below:

A. Certification of the action as a class action pursuant to Federal Rule of Civil Procedure 23, and appointment of Plaintiff as Class Representative and his counsel of record as Class Counsel;

B. A declaration that Defendants' conduct constituted an unlawful restraint of trade in violation of the federal and state law alleged herein and that Defendants are liable for the conduct or damage inflicted by any other co-conspirator.

C. Restitution and/or damages to members of the Tennessee Indirect Purchaser Class for their purchases of Lithium Ion Rechargeable Batteries and Lithium Ion Rechargeable Battery Products at inflated prices;

D. Actual damages, statutory damages, punitive or treble damages, and such other relief as provided by the statutes cited herein;

E. Pre-judgment and post-judgment interest on such monetary relief;



F. Equitable relief in the form of restitution and/or disgorgement of all unlawful or illegal profits received by Defendants as a result of the anticompetitive conduct alleged herein;

G. The costs of bringing this suit, including reasonable attorneys' fees; and

H. All other relief to which Plaintiff and Class members may be entitled at law or in equity.

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**DEMAND FOR JURY TRIAL**

Plaintiff, on behalf of himself and all others similarly situated, hereby requests a jury trial on any and all claims so triable.

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By /s/ James E. Cecchi  
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